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ENTOMOLOGICAL NEWS

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New Species of Chimarra from Mexico and Central America (Trichoptera, Philopotamidae)

By HERBERT H. ROSS, Illinois Natural History Survey, Urbana

The Nearctic species of *Chimarra* contain data which should be highly informative concerning the evolution of aquatic insects in the eastern and central United States, especially during Pleistocene time. Up to the present, however, efforts to extract and apply this information have been hampered seriously because of the polyphyletic nature of our *Chimarra* fauna. The chief difficulty seems to be that the United States fauna of *Chimarra* has probably arisen from several phyletic lines having an origin in Mexico, and our knowledge of the Mexican fauna is fragmentary. An effort is made in this paper to describe new species from Mexico and Central America as the first step in adducing the phylogeny of this interesting group.

Holotypes and some paratypes described in this paper are deposited in the collection of the Illinois Natural History Survey; other paratypes are deposited in the Escuela Nacional de Agricultura, Mexico City, D. F.

Subgenus **CHIMARRA** Stephens

The first 11 species described herein belong to the *aterrima* group of the subgenus *Chimarra* as defined by Ross (1956). In all of these species the ninth segment has a large ventral keel, the cercus is button or biscuit shaped, and the tenth tergite has two pairs of lobes of which the mesal pair are membranous and often inconspicuous, and the aedeagus has one or two pairs of simple rods in addition to other unpaired internal structures.

Chimarra embia new species

The simple claspers and processes of the tenth tergite are not only diagnostic for this species but also indicate that it is probably one of the most primitive known members of the *aterrima* group.

Male: Length 4.5 mm. Color very dark brown, the dorsal surface blackish, the legs a slightly lighter shade of brown. General structure and venation typical of the *aterrima* group. Male genitalia as in fig. 1. Ninth segment constricted near middle of lateral margin, with a rather narrow dorsal position. Claspers elongate and narrow from both lateral and posterior views, with a simple mesal lobe near middle. Tenth tergite with both mesal and lateral lobes short and pointed. Aedeagus with two short pairs of simple rods.

Holotype ♂.—Tonala, Chis., MEX., Sept. 2, 1932, A. Dampf. *Paratypes.*—MEXICO (all at light, A. Dampf): Same data as holotype, 11 ♂; Tonala, Chis., May 23, 1926, 7 ♂; Rio Ixtepec, Oax., July 30, 1938, 5 ♂; La Forestal, Ver., May 22, 1926, 7 ♂.

Chimarra ovalis new species

An unusually distinctive member of the *aterrima* group, set off from all others by the spikelike lateral lobes of the tenth tergite.

Male: Size, color, and general structure similar to the preceding. Male genitalia as in fig. 2. Ninth segment forming a wide ring. Clasper fairly long and broad, bearing a series of long apical dorsal spines; the dorsal margin is incised and curved mesad to form a large mesal projection. Lateral lobes of tenth tergite narrow, spikelike, and heavily sclerotized. Aedeagus with two simple rods, one of medium length and the other twice as long.

Holotype ♂.—Salto de Agua, Chis., MEX., Apr. 28, 1938, A. Dampf.

Chimarra volenta new species

This species is probably closest to *ovalis,* differing in the shorter clasper and much higher lateral lobes of the tenth tergite.

Male: Length 6.5 mm. Color and general structure as for *ovalis*. Male genitalia as in fig. 6. Ninth segment somewhat narrowed dorsally. Clasper short, almost quadrate, the dorsal margin produced mesad to form a short lobe. Lateral lobes of tenth tergite high near the base, then tapering almost to a point at apex. Aedeagus with two simple rods, both of them massive at base, tapering and heavily sclerotized, one fairly long and the other only two-thirds as long.

Holotype ♂.—No data but submitted by A. Dampf and presumably collected in Mexico.

Chimarra acuta new species

This and the following species are readily distinguished from other members of the *aterrima* group by the curious forked mesal process on the dorsal margin of the clasper.

Male: Size, color, and general structure similar to *embia*. Genitalia as in fig. 3. Ninth segment with very broad ventral lobes; the dorsal portion forms a ridge at the base of the tenth tergite. Clasper broad at base, tapering dorsally to a narrow apex which curves abruptly mesad and is incised and almost clawlike at the tip. Lateral lobes of tenth tergite short and blunt. Aedeagus with two subequal simple setae, both very long.

Holotype ♂.—Cuernavaca, Mor., MEX., Apr. 30, 1932, at light, A. Dampf. *Paratype*.—Same data as holotype, but Mar. 2, 1932, 1 ♂.

Chimarra boneti new species

This is a sister species of the preceding, differing from it in the truncate apex of the clasper and the dissimilar simple rods of the aedeagus.

Male: Size, color, and structure similar to the preceding. Male genitalia, fig. 4, similar in most respects to the preceding with the following differences: lateral lobes of the tenth tergite slightly shallower; lateral view of clasper with the tip forming an obliquely truncate and slightly expanded apex; the two sim-

ple internal rods of the aedeagus dissimilar, one long and only slightly curved, the other shorter and markedly arcuate.

Holotype ♂.—Ocosingo Valley, Chis., MEX., Finca El Real, July 1, 1950, at light, Rio Sta. Cruz, C. & M. Goodnight and L. J. Stannard. *Paratypes.*—Same, but Finca Monte Libano, July 4, 1950, 2 ♂.

Chimarra schiza new species

This species differs from others in the *aterrima* group by the combination of the short clasper and the deep and rounded lateral lobes of the tenth tergite.

Male: Length 5.5 mm. Color a deep almost bluish black, the under parts and legs with a brownish cast. General structure as for *aterrima* group. Genitalia as in fig. 5. Ninth segment markedly narrow dorsally. Clasper short, almost quadrate from lateral view, with a row of four setae on apical margin. Lateral lobes of tenth tergite deep and rounded at apex. Aedeagus with two subequal simple spines which are long, slender, and parallel.

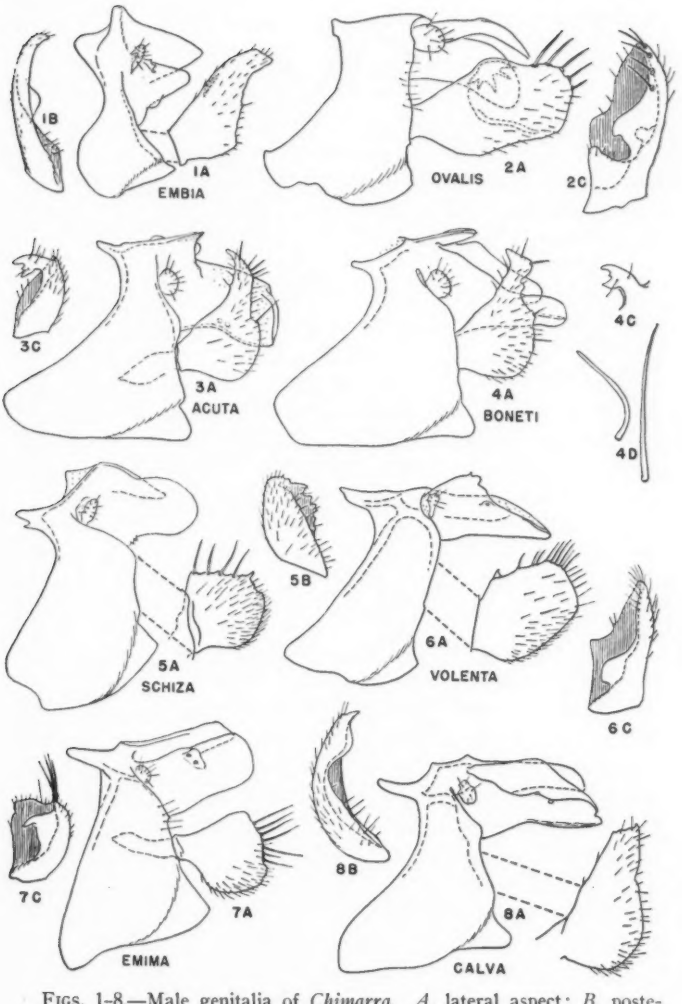
Holotype ♂.—Huajuapan, Oax., MEX., Nov. 8, 1944, at light, A. Dampf.

Chimarra emima new species

In the quadrate clasper this species resembles the preceding, but *emima* differs from *schiza* in the dorso-mesal tooth of the clasper and the dorsal position of the two sensillae on the lateral lobes of the tenth tergite.

Male: Length, color, and general structure similar to the preceding. Male genitalia as in fig. 7. Ninth segment narrowed dorsally. Clasper short and somewhat quadrate, with a row of long setae on the apical margin. Tenth tergite with lateral lobes fairly long and deep, nearly parallel-sided, slightly rounded at apex, and with the sensillae on a slight elevation near dorsal margin. Aedeagus with two heavily sclerotized simple rods, one very long and the other about half as long.

Holotype ♂.—Madden Dam, C. Z., Jan. 20–23, 1946, Eliot C. Williams, Jr.



FIGS. 1-8.—Male genitalia of *Chimarra*. *A*, lateral aspect; *B*, posterior or postero-ventral aspect of clasper; *C*, dorsal aspect of clasper; *D*, simple rods of aedeagus.

Chimarra calva new species

From all but *embia* this species differs in the elongate and simple clasper; from *embia* it differs markedly in the elongate lobes of the tenth tergite.

Male: Size, color, and general structure similar to the preceding. Genitalia as in fig. 8. Ninth segment markedly narrowed dorsally. Clasper moderately large at base, tapering to apex, from posterior view narrow and sinuate. Tenth tergite with lateral lobes long and large, the lateral face traversed by a sinuate crease on which are situated the two sensillae. Aedeagus with two simple rods, one of moderate length and the other only half as long.

Holotype ♂.—Tecpatan, Chis., MEX., Sept. 1, 1946, A. Dampf. *Paratypes.*—MEXICO: Chiltepec, Oax., Dec. 9, 1937, at light, A. Dampf, 2 ♂; Hacienda, Santa Engracia, Tamaulipas, Mar. 9, 1939, C. C. Plumber, 8 ♂; Santa Engracia, Tamaulipas, Apr. 16, 1936, at light, A. Dampf, 1 ♂; same but Mar. 21, 1936, 2 ♂; Tamazunchale, Mar. 29, 1951, at light, J. D. Lattin & N. Walker, 21 ♂.

Chimarra curfmani new species

This species is easily distinguished from other members of the *aterrima* group by the mesal thickenings on the clasper.

Male: Size, color, and general structure similar to the preceding. Genitalia as in fig. 9. Ninth segment only moderately narrowed dorsally. Clasper fairly narrow and high, its posterior face also narrow and with a series of sclerotized thickenings on the mesal edge. Lateral lobes of tenth tergite short and deep, the apical area with a wide flange just above the ventral margin. Aedeagus with two simple rods which are long, stout, slightly curved, and subequal in length.

Holotype ♂.—Ocosingo Valley, Chis., MEX., Finca Monte Libano, July 4, 1950, at light, C. & M. Goodnight and L. J. Stannard. *Paratypes.*—MEXICO: same data as holotype, 1 ♂; Rancho Monter, Oax., Dec. 16, 1937, at light, A. Dampf, 5 ♂.

Chimarra setosa new species

The short clasper is suggestive of both *schiza* and *emima* but from both of these *setosa* differs in the curious shape of the lateral lobes of the tenth tergite.

Male: Size, color, and general structure as for the preceding. Male genitalia as in fig. 10. Ninth segment markedly narrowed dorsally. Clasper short and somewhat quadrate, its apical margin with a row of long setae. Lateral lobes of tenth tergite incised at apex to form small lateral and apical lobes, the two sensillae situated on the former. Aedeagus with one very long and tapering simple rod, and another half as long, stouter, more heavily sclerotized, and with a minute right-angle hook at its tip.

Holotype ♂.—Finca Vergel, Chis., MEX., May 19, 1935, at light, A. Dampf. *Paratypes.*—MEXICO: Same data but May 9 to June 13, 1935, 63 ♂; Finca Victoria, Chis., May 29, 1935, at light, A. Dampf, 1 ♂; Finca Esperanza, Chis., June 20, 1938, at light, A. Dampf, 6 ♂; same but June 5, 1939, 3 ♂; same but June 26, 1939, 2 ♂.

Chimarra cornuta new species

The shape of the clasper suggests a relationship with *boneti,* from which this species differs in the shorter ninth tergite and the shape of the lateral lobes of the tenth tergite.

Male: Size, color, and general structure as for the preceding. Genitalia as in fig. 11. Ninth segment narrowed dorsally, the tergite forming a well-defined lateral spur at the base of the tenth tergite. Clasper short and stocky, with a large ventral portion and a narrow apical portion; seen from above this latter curves mesad and ends in a sharp point. Tenth tergite with lateral lobes long, deep at base and narrowing and curved at apex, the two sensillae situated on a flange near the dorsal margin. Aedeagus with two subequal simple rods which are long and fairly straight.

Holotype ♂.—Finca Vergel, Chis., MEX., May 11, 1935, at light, A. Dampf. *Paratype.*—MEXICO: Finca Esperanza, Chis., Sept. 21, 1938, at light, A. Dampf, 1 ♂.

Subgenus CURGIA Walker

The three following species belong to a compact group characterized as follows: The ninth segment tapers to a dorsal point, the claspers are small and heavily sclerotized, the tenth tergite is a single structure which has a large cluster of small sensillae at its apex, and the eighth tergite, fig. 12, bears setose lobes and sometimes other ornamentations.

Chimarra brustia new species

This species is a close relative of *laguna* Ross, differing from it only in the ornamentation of the eighth tergite.

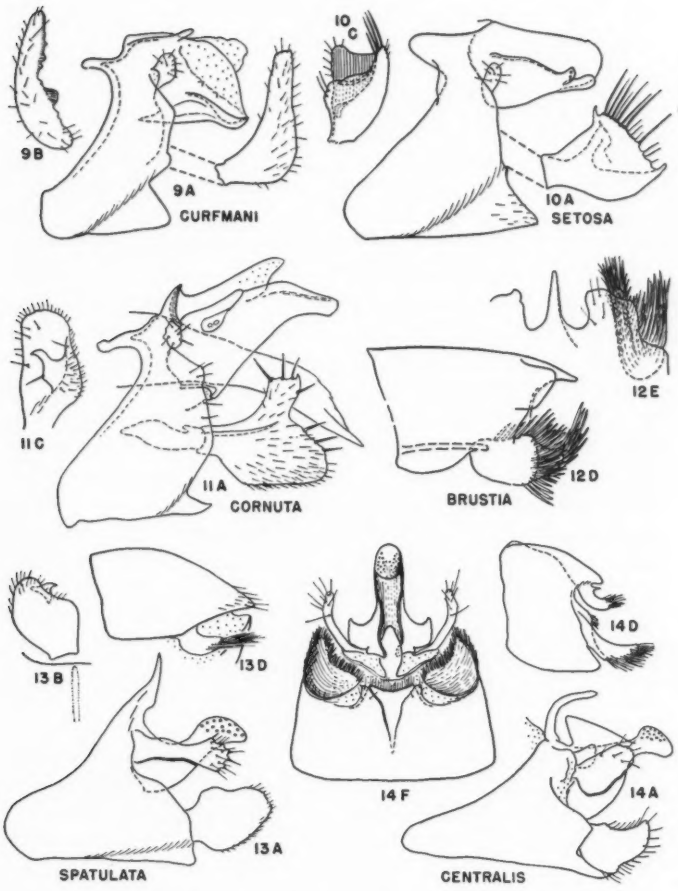
Male: Length 7 mm. Color dark brown, almost black dorsally. General structure as for group. Eighth tergite, fig. 12, with the apical margin incised to form a long central point and a pair of irregular but wide lateral lobes; postero-ventral corner of segment produced into a somewhat quadrate outer lobe bearing an apical brush of setae and, internal to this, a longer and narrower lobe ending in a tuft of long setae. Male genitalia exactly as for *laguna* (see Ross 1951, fig. 2). Ninth segment ending in a sharp ventral process. Tenth tergite deep, upturned, and slightly hooklike. Cercus small and clavate. Aedeagus with two short, stout, simple rods.

Holotype ♂.—Cocula, Guerrero, MEX., Dec. 17, 1936, at light, A. Dampf. *Paratypes.*—MEXICO: Same data as holotype, 1 ♂; Cuernavaca, Mor., July 27, 1932, A. Dampf, 1 ♂; Camomilas, Mor., May 9, 1942, at light, A. Dampf, 1 ♂.

Chimarra spatulata new species

This species is most closely related to the preceding but differs from it in the simpler eighth tergite and the sinuous tenth tergite.

Male: Length 6 mm. Head, antennae, legs, and abdomen red, thorax and wings black. General structure as in the preceding. Genitalia as in fig. 13. Eighth tergite with apical margin wide and slightly emarginate; from its postero-ventral corner arises a small lobe bearing a brush of setae. Clasper small, with



FIGS. 9–14.—Male genitalia of *Chimarra*. *A*, lateral aspect; *B*, posterior or ventral aspect of clasper; *C*, dorsal aspect of clasper; *D*, *E*, lateral and dorsal aspect of eighth tergite; *F*, ventral aspect of genitalia.

a short hooklike tooth on its mesal surface. Cercus situated fairly high on base of tenth tergite, long and spatulate. Tenth tergite sinuate. Aedeagus without simple rods.

Holotype ♂.—Finca Vergel, Chis., MEX., May 22, 1935, at light, A. Dampf. *Paratypes.*—MEXICO (all at light, A. Dampf): Finca Vergel, Chis., May 30, 1935, 1 ♂; Ayotzinapa, Gro., Jan. 24, 1941, 1 ♂; Finca Vergel, Chis., May 23, 1935, 1 ♂; Finca Esperanza, Chis., March 26–31, 1939, 1 ♂.

Chimarra centralis new species

This species is most closely related to the preceding and to *persimilis* Banks. From *spatulata* it differs in the winglike process on the aedeagus and from *persimilis* in the short claspers.

Male: Size, color, and general structure as for the preceding. Genitalia as in fig. 14. Eighth tergite with two pairs of apical finger-like lobes, each bearing a brush of setae. Dorsum of ninth segment bearing an erect narrow flap which curves posteriorly. Clasper short and triangular, the posterior face concave. Cercus short and deep. Tenth tergite very deep at base, the apex clavate; at its base there arises a pair of small flaps and from each side near the dorsal margin arises a broad, winglike extension. Aedeagus with three short, stout, simple rods.

Holotype ♂.—Potrerillos, PANAMA, March, 1934, H. S. Parish. *Paratypes.*—Same data as holotype, 6 ♂.

REFERENCES CITED

Ross, H. H. 1951. The Trichoptera of Lower California. Proc. Calif. Acad. Sci. Fourth Ser., 27(3): 65–75.

——. 1956. Evolution and Classification of the Mountain Caddisflies. Univ. of Ill. Press, Urbana. 213 pp.

A Nest of Bombus huntii Greene (Hymenoptera: Apidae)

By JOHN T. MEDLER, University of Wisconsin, Madison, Wisconsin

Fortuitous observations on bumblebees entering and leaving a pile of wooden stakes led to the discovery of a large nest of *B. huntii* Greene while I was vacationing at Ruidoso, New Mexico. The stakes were piled in a 6-inch space between two outbuildings. When the stakes were removed, the bees were seen emerging from a crack at the bottom of the wall of one of the buildings. As this building was a storage shed, the floor boards were removed and the nest located on the ground in the 6-inch space under the floor. The bumblebees had utilized a rat nest made with well-shredded paper-like material, probably obtained from a piece of wood-fiber insulating board. This material had been worked up by the bees to form a uniform protective cover over the comb.

During the morning of August 3, 1958, the worker bees were captured with a net when returning to the nest from foraging trips, or when leaving. More than two-thirds of the bees returning were loaded with pollen; the others carried nectar. By noon, the foraging bees had been reduced to the extent that the nurse and guard bees could be collected from the nest, and the comb removed for study. Later in the afternoon about 25 bees were collected as they searched for their lost nest.

The adult population of the nest consisted of five hundred and fifteen workers and the queen.

The inner surface of the shredded paper that covered the comb was lined with a layer of wax. This formed a smooth, continuous canopy above the comb. The comb consisted of many irregular clusters of cells with a normal, healthy appearance. Cell clusters are a characteristic feature of a bumblebee nest as a result of eggs laid in batches in a single cell. The larvae which develop from the eggs subsequently occupy individual cells which are grouped around the site of the original cell.

The cells were counted according to their position in clusters. Careful attention was given to the cluster structure of the comb,

but it was not possible to delimit precisely all of the clusters in the bottom layers of old comb. Therefore, a few doubtful separations were made among the empty cells. This problem was not encountered with the cells that contained brood.

The comb contained eighteen egg cells. The number of eggs in a cell ranged from 1 to 48, as follows: 1, 2, 2 (both eggs collapsed), 3, 5 (on long pollen cylinder), 7, 7 (on long pollen cylinder), 8, 9, 10, 15, 24, 25 (on long pollen cylinder), 31 (many mites), 40 (many mites, 15 eggs collapsed), 46 (5 eggs collapsed), 47 (4 mites), 48 (many mites). Total = 330 eggs.

The relationship between the mites and the eggs is not known. Possibly the mites feed on eggs and were responsible for the collapsed eggs found in some cells. Plath [1] thought it likely that mites in bumblebee nests live, at least in part, on the exudates of the larvae and adult bees.

Each egg cell was sealed with wax and located on top of a cylinder of pollen. All cylinders were 12 mm. in diameter. The measurements on length and weight that follow were not associated with the respective egg counts. However, no consistent relation was noted between the length of pollen cylinders and the number of eggs.

Cylinder No.	1	2	3	4	5	6	7	8	9
Length (mm.)	23	20	20	19	18	10	10	10	10
Weight (gm.)	3.03	2.66	2.43	2.08	1.79	1.29	1.08	1.08	1.04
Cylinder No.	10	11	12	13	14	15	16	17	18
Length (mm.)	10	9	9	8	8	7	7	7	6
Weight (gm.)	1.02	.98	.92	.89	.77	.58	.56	.44	.39

Twenty wax tubes had been constructed for the storage of pollen, of which sixteen were empty. Pollen storage had been started in the other four tubes. Thirteen of the tubes were located on the periphery of the comb. All tubes were 12 mm. in diameter and 25 mm. in length.

[1] PLATH, O. E. 1934. Bumblebees and their ways. Macmillan Co., New York.

Seven clusters contained cells with larvae in several stages of development. The number of cells in each cluster, arranged in a sequence of young to mature larvae, were as follows: 17, 22, 13, 14, 11, 8, 16. The cells in the first four groups were still enclosed in a wax envelope. The larvae in the last four groups had spun cocoons. Mites were found within the wax envelopes of the first three groups.

The clusters containing pupae had cells of two sizes. The larger cells were approximately 10 mm. wide and 17 mm. long. The smaller cells were 7 × 10 mm. Counts are tabulated below.

Cluster No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Small cells	1	4	1	2	9	1	20	2	15	13	4	2	11	6	2	24		117
Large cells	18	1		4			7	10	2	6	14	2	11	24	18		2	119
Empty cells		16	30	18		25				2	3	3					27	124
Total	19	21	31	24	9	26	27	12	17	21	21	7	22	30	20	24	29	360

The two distinct sizes of cells indicated that reproductives were being produced. Most of the pupae in the large cells were in a non-pigmented stage. A small series of these preserved for study consisted of females only. Two pupae were matured enough so that the basal segment of the labial palp could be measured. These measurements were 3.5 and 3.9 mm. A similar measurement on the queen of the colony was 3.6 mm. As the basal segment of the palp in a long series of workers did not exceed 3.0 mm., it is concluded that the new queens were occupying the large cells, but that the nest was taken just prior to their emergence.

The empty cells in the comb were grouped in clusters ranging from 11 to 49 cells, as follows: 11, 12, 12, 13, 14, 17, 19, 20, 21, 21, 26, 28, 29, 30, 31, 32, 36, 38, 40, 41, 45, 49. Total = 585 cells.

A substantial number of the above cells were filled with honey, many of which were capped with wax. A few cells contained pollen.

The data obtained from a study of the nest are summarized as follows:

Queen	1	Empty worker cells	709
Adult workers	515	Eggs (in good condition)	308
		Larvae	101
		Worker pupae	117
		Queen pupae	119
		Total	1354

As the colony contained the queen, numerous workers, normal brood, and stores of nectar and pollen, it can be predicted that the population of this nest would have surpassed 1,500 individuals. The dry protected nesting site, and the ample rainfall in 1958, which had produced an abundance of flowering plants, especially sweet clover, were undoubtedly responsible in a large part for the development of this potentially large colony.

B. huntii is reported to be a common species in the transition zone of western North America. Ruidoso, New Mexico (elevation 7,500 ft.) probably represents a southern limit to the distribution of the species. This record of a large nest, however, indicates that the higher elevations in southern New Mexico can provide a suitable environment for the species.

Records of Diptera from Guadalupe Island, Mexico

By Paul H. Arnaud, Jr.,[1] California Department of Agriculture, Sacramento, California

Guadalupe Island, Mexico, is located 180 miles southwest of San Diego, California. Hanna and Anthony (1923: 71–83),[2] who provide an interesting illustrated account of their visit, describe the island as rising "precipitously from abysmal depths, a volcano some 12,000 feet high but with only 4,500 feet above the sea." It is approximately 20 miles long and 6 miles wide. Much of the native fauna and flora has been or is in the process of being exterminated as a result of the introduction of goats,

[1] The author would like to express his thanks to Mr. Sefton and Mr. Harbison for collecting these specimens. He is also indebted to Dr. D. Elmo Hardy, Dr. H. C. Huckett, and Mr. C. W. Sabrosky for their authoritative determinations.

[2] A cruise among desert islands. The National Geographic Magazine 44(1): 70–99, 31 figures, 1 map, 1923.

house cats, and house mice. Even though the recording of the following four species of Diptera is probably very incomplete for the existing fauna, they are recorded as an introduction to our knowledge of the Dipterous fauna of this island. I know of no recorded Diptera from Guadalupe in our entomological literature. The species here recorded are all known to occur in California, with the exception of *Euryomma peregrinum*. The specimens reported upon were collected through the interest of Mr. J. W. Sefton, Jr.,[3] President, San Diego Trust & Savings Bank, and Mr. C. F. Harbison,[4] Curator of Entomology, San Diego Society of Natural History.

Family Bibionidae

Bibiodes halteralis Coquillett (det. D. Elmo Hardy)

Bibiodes halteralis Coquillett, 1904, Proc. Ent. Soc. Washington 6(3): 171.
Bibiodes halteralis Hardy, 1945, Univ. Kansas Sci. Bull. 30(2): 496, figs. 207 a–b.

1 ♂, 1 ♀, Pine Ridge, 14–XII–1957 (C. F. Harbison) [Deposited in the collections of the San Diego Society of Natural History and Dr. D. Elmo Hardy, University of Hawaii.]

Dr. Hardy considers these two specimens to be aberrant specimens of *halteralis*. According to Coquillett (1904) the

[3] Mr. Sefton left San Diego aboard the Scripps Research ship *Orca* (formerly owned by the Sefton Foundation), October 24, 1957, arrived at Guadalupe on October 25, left October 30, and returned to San Diego October 31. In addition to the Diptera here recorded, Mr. Sefton collected 110 specimens of Coleoptera and a lesser number of specimens of miscellaneous orders. These specimens have been deposited in the collections of the California Academy of Sciences and the San Diego Society of Natural History.

[4] Mr. Harbison left San Diego aboard the Scripps Research ship *Stranger* December 12, 1957, arrived at Guadalupe on December 13, left December 19, and returned to San Diego December 20. In addition to the Diptera here recorded, Mr. Harbison collected a total of 325 Insecta (134 Coleoptera, 119 Lepidoptera, 48 Hymenoptera, 10 Orthoptera, 8 Thysanura, and 6 Hemiptera) and 26 Arthropoda other than Insecta. These specimens are all deposited in the collections of the San Diego Society of Natural History.

type series of this species consisted of nine males and one female collected in San Mateo and Los Angeles counties of California. Hardy (1945) lists the type locality as San Mateo County and records this species from additional localities in Saskatchewan, New Mexico and Arizona.

Family Calliphoridae

Phormia regina (Meigen) (det. C. W. Sabrosky)

Musca regina Meigen, 1826, Syst. Beschr. 5: 58.
Phormia regina Hall, 1948, The Blowflies of N. A., pp. 161–168, figs.

25 ♂♂, 22 ♀♀, Northeast Anchorage, 25–X–1957 (J. W. Sefton, Jr.); 1 ♂, same data except dated 26–X–1957; 1 ♀, Northeast Anchorage, 13–XII–1957 (C. F. Harbison); 1 ♀, Weather Station, 18–XII–1957 (C. F. Harbison) [Deposited in the collections of the United States National Museum, San Diego Society of Natural History, California Department of Agriculture, and the author.]

This is a holarctic species recorded by Hall (1948) as occurring as far south as Mexico City, Mexico and also from Oahu in the Hawaiian Islands.

Family Muscidae

Euryomma peregrinum (Meigen) (det. H. C. Huckett)

Anthomyia peregrina Meigen, 1826, Syst. Beschr. 5: 187.
Euryomma peregrinum Seguy, 1937, Genera Insectorum, 205me Fasc.: 180.

2 ♀♀, collected in Captain's cabin on Orca, 26–X–1957 (J. W. Sefton, Jr.) [Deposited in collections of San Diego Society of Natural History and the author.]

In a communication dated January 27, 1958, Dr. Huckett states, "Distribution: Cosmopolitan. I have specimens from Chicago and Urbana, Illinois. Recorded from Europe, Hawaii." It has not been recorded as occurring in California.

It is probable that these specimens originated from the island and reached the ship while at anchorage. However, it should be

noted that the specimens were collected on the third day out of San Diego. This species was originally described by Meigen on the basis of a female specimen collected in the saloon of an American ship at Hamburg.

Pegomya cognata Stein (det. H. C. Huckett)

Pegomyia cognata Stein, 1920, Arch. f. Naturgesch., 84 (A) (9) : 67.
Pegomyia cognata Huckett, 1941, Mem. Amer. Ent. Soc., No. 10 : 73, figs. 21, 82, and 89.

1 ♂, 1 ♀, Weather Station, 18–XII–1957 (C. F. Harbison) [Deposited in the collections of the San Diego Society of Natural History and the author.]

Huckett (1941) records only eight known specimens of this species, from two different California localities—5 males from Samoa Beach and dunes, Humboldt County and 3 male cotypes from Stanford University. The original orthography of the generic name is used here.

Nomenclatorial Considerations Relative to the Genus Myodocha Latreille, 1807 (Hemiptera)

By James A. Slater,[1] Harry G. Barber,[2] and Reece I. Sailer [3]

The correct use of the generic name *Myodocha* Latreille has been the subject of controversy for many years, even though it is well established as the name of a genus of Lygaeidae. There has been good reason to question the current use of the name. In fact it is evident that strict compliance with the International Rules would require that *Myodocha* be applied to a large genus of economically important rice bugs in the family Coreidae. This genus was long known as *Leptocorisa* Latreille, 1829, and more

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recently as *Leptocorixa* Berthold, 1827. In order to avoid the confusion that would result if *Myodocha* were to be applied to the rice bugs, we propose to ask the International Commission on Zoological Nomenclature to conserve *Myodocha* in the sense that it is currently used for a genus of Lygaeidae. This paper is published in order to make the relevant facts generally known pending publication of the Commission's decision. The pertinent nomenclatorial data are as follows:

1. Latreille (1807, p. 126) founded *Myodocha* to include three species, *Cimex tipuloides* De Geer, *Cimex trispinosa* De G., and *Cimex fulvipes* De G.

2. The generic diagnosis does not agree well with any of these species and most subsequent authors have agreed that the manuscript was probably mixed. This seems likely, since Latreille himself in 1810 (pp. 255, 433) named a lygaeid, *Myodocha serripes,* as type species. It is, of course, an invalid fixation as *serripes* was not an originally included species and, in fact, had not yet been described.

3. Olivier (1811, p. 106), apparently intending to follow Latreille, described the genus *Myodochus* and included the description of a single species, *serripes,* which thus became the monobasic type species of *Myodochus* Oliv. (not *Myodocha* Latr.).

4. Leach (1815, p. 122) designated *Cimex tipuloides* De G. as type species of *Myodocha* Latreille. This is the first valid type fixation under the Rules.

5. Say (1832, p. 19), Laporte (1832, p. 33), Spinola (1840, p. 103), Herrich-Schaeffer (1853, p. 213), and Stål (1874, p. 147) used *Myodocha* Latreille for the lygaeid genus to which *serripes* Olivier belongs.

6. Stål (1872, p. 50) replaced the subfamily name Rhyparochromida Stål (1862, p. 210) with Myodochina based on *Myodocha* Latreille. Myodochina continued in general use until Van Duzee (1916, p. 21) restored Rhyparochrominae on the grounds that it was based on the oldest group name used in the subfamily.

7. Kirkaldy (1902, p. 306), an advocate of strict application

of the rules of nomenclature, discovered that Leach (1815, p. 122) had designated *tipuloides* De G. as the type species of *Myodocha*. He then made *Leptocorisa* Latreille, 1829, a synonym of *Myodocha* Latreille, 1807, and referred *serripes* Olivier to *Chiroleptes* Kirby, 1873. A further consequence of this action relative to *Myodocha* was to add to the instability of the name used for the entire family to which *serripes* Olivier belongs. Kirkaldy in 1899 (p. 220) in common with Reuter (1888, p. 294) erroneously believed that Fabricius had fixed the type (see China 1943, p. 218) of *Lygaeus* as *valgus* L., 1758. This placed *Lygaeus* in the family Coreidae and, for reasons not clear to the present authors, he treated Coreidae Leach, 1815 [Coreides], as a synonym of Lygaeidae Schilling, 1829 [Lygaeides]. With *Myodocha* no longer available for the lygaeids, he named the family Geocoridae based on *Geocoris* Fallen, 1814. Subsequent authors did not follow Kirkaldy, and his attempt to replace Coreidae with Lygaeidae and to use Geocoridae for the lygaeids had no effect other than to promote confusion in the family and subfamily names of the coreids and lygaeids.

8. Van Duzee (1914, pp. 378–379), Horvath (1911, pp. 12–13), Stichel (1925, pp. 394–398), and Bergroth (1912, pp. 162–164), all rejected *tipuloides* as the type species of *Myodocha* and accepted the genus in the sense represented by *Myodochus serripes* Olivier. These authors were aware of Kirkaldy's action but either rejected Leach's type designation (Van Duzee) or openly accepted usage as a guide (Bergroth).

9. Under the Rules it is clear that *Myodocha* Latreille, 1807, must take *tipuloides* as type species. The name thus has priority over the long accepted coreid name, *Leptocorisa* Latreille, 1829 (now *Leptocorixa* Berthold, 1827, see Hussey, 1950, p. 152).

10. Also, under the above interpretation, the lygaeid genus must take the name *Myodochus* Olivier, 1811, with *serripes* Olivier as the type species.

From this evidence it is clear that *Myodocha* should be applied to the coreid genus. While such a change would seem to be

contrary to the intent of the original describer, loss of the name in Lygaeidae would not be a serious matter, since it would be replaced by *Myodochus*. However, the use of *Myodocha* in the Coreidae would disturb usage that has been established for over a hundred years and is of special concern since the insects are of considerable economic importance. Therefore, in accordance with the restated objectives of the use of the plenary powers (Hemming, 1953, p. 23), we propose to request the International Commission on Zoological Nomenclature to consider this case. If the Commission agrees that action to conserve *Myodocha* Latreille in its current sense as the name for the genus of Lygaeidae is in accord with these objectives, the following actions should then be taken:

1. Reject Leach's (1815) designation of *Cimex tipuloides* De Geer as type species of *Myodocha* Latreille, 1807.

2. Designate *Myodochus serripes* Olivier, 1811, as type species of *Myodocha* Latreille, 1807.

3. Place the generic name *Myodocha* Latreille, 1807, with the type species mentioned under 2 above on the Official List of Generic Names in Zoology.

If approved by the Commission, these actions would allow *Myodocha* Latreille, 1807, to be retained for the genus of Western Hemisphere Lygaeidae represented by the species *serripes* Olivier to which the name has been generally applied for over 100 years; *Myodochus* Olivier, 1811, would become an objective junior synonym of *Myodocha* Latreille, 1807; and, most important of all, *Myodocha* Latreille, 1807, would not preoccupy the *Leptocorixa* Berthold, 1827, which could then be retained for the rice bugs.

Such action would retain current nomenclatorial usage and avoid the unfortunate confusion certain to result if the name of a well known genus in one family were to be applied to a well known genus in a different family. Pending the Commission's decision on this question, the authors propose to continue using the name *Myodocha* in its currently accepted sense and urge other authors who have occasion to use the name to do likewise.

References Cited

Bergroth, E. 1912. Wiener Ent. Zeit. 31: 162–164.

China, W. E. 1943. The Generic Names of British Insects. Part 8. Hemiptera-Heteroptera. pp. 211–242. Royal Entomological Soc. London. London.

Hemming, F. [edited by]. 1953. Copenhagen Decisions on Zoological Nomenclature. 135 pp. International Trust for Zoological Nomenclature. London.

Herrich-Schaeffer. 1853. Die Wanzenartigen Insecten. Bd. 9, 210 pp. Nürnberg.

Horvath, G. 1911. Ann. Mus. Nat. Hungarici. 9: 1–34.

Hussey, R. F. 1950. Florida Ent. 13: 150–154.

Kirkaldy, G. W. 1899. Entomologist 32: 217–221.

——. 1902. Jour. Bombay Nat. Hist. Soc. 14: 294–309.

Laporte, F. L. de. 1832. In Guerin, Magasine Zoolique, Nos. 52–55, suppl., 88 pp.

Latreille, P. A. 1807. Genera Crustaceorum et Insectorum secundum Ordinem naturalem in familias disposita, iconibus exemplisque plurimis explicata. Vol. 3, pp. 1–258. Paris.

——. 1810. Table des genres avec l'indication de l'espéce qui leur sert de type. Considérations générales sur l'order naturel des animaux. 144 pp. Paris.

——. 1829. Les Crustaces; les Arachnides et les Insects distribues en familles naturelles, ouvrage formant les tomes 4 et 5 de M. Le Baron Cuvier sur le regne animal (deuxieme edition). Vol. 2, xxiv + 556 pp.

Leach, W. E. 1815. Hemiptera, in Brewster's Edinburgh Encyclopaedia. Vol. 9, 766 pages.

Olivier, A. G. 1811. Encyclopedie methodique, dictionnaire des insects. Vol. 8, 722 pages. Paris.

Reuter, O. M. 1888. Acta Soc. Sci. Fenn. XV: I, 241–315; II, 443–812.

Say, T. 1831–32. Descriptions of new species of Heteropterous Hemiptera of North America. 39 pp. New Harmony, Ind. (pages 1–8 issued in 1831).

Spinola, M. 1837. Essai sur le Insectes Hemipteres, Rhyngotes, ou Heteropteres. 383 pp. Paris.

Stål, C. 1862. Ofv. Svenska Vet. Ak. Förh. 19: 203–225.

——. 1872. Ofv. Svenska Vet. Ak. Förh. 29: 37–62.

——. 1874. Svenska Vet. Ak. Handl. 12(1): 98–170.

Stichel, W. 1925. Konowia 4: 392–398.

Van Duzee, E. P. 1914. Can. Ent. 46: 377–389.

——. 1916. Check List of the Hemiptera (excepting the Aphidae, Aleurodidae and Coccidae) of America, North of Mexico. xi + 111 pp. New York Entomological Society.

Cratichneumon w-album Cresson and variegatus Provancher

By Gerd H. Heinrich, Dryden, Maine

About five different male species of the genus *Cratichneumon* Thomson, all occurring in the Eastern Canadian Zone (and adjacent regions), agree in the general color pattern of the body as given by Cresson in the original description of his species *Ischnus w-album* (Proc. Ent. Soc. Phila. 3: 191, 1864). As far as color is concerned in this group of species only the pattern of the legs, especially of the tibiae III, has to a certain degree, specific distinction. According to Cresson's original description this is the color of the tibiae of w-album ♂: ". . . a band on the posterior tibiae near their base, also whitish; extreme base of the posterior tibiae as well as their apical half exteriorly, blackish."

In 1877 (Trans. Amer. Ent. Soc. VI: 179, 180) Cresson redescribed the species. This time he refers to the color of legs of the male only as "legs fulvous."

The type (number 1253) in the collection of the Academy of Natural Sciences of Philadelphia at present considered as representing the species *Ischnus w-album* Cresson has uniform fulvous tibiae III without any whitish or dark mark. It therefore matches Cresson's redescription of the species of 1877 but not at all its original description.

The type, and all paratypes of *Ischnus w-album* in the Cresson collection, represent a species which is by five different morphological characters extraordinarily well and unmistakably defined. This species has invariably uniform fulvous tibiae III without whitish or dark marks. It is therefore with certainty different from the species originally described as *Ischnus w-album* by Cresson, the type of which has to be considered as lost.

The type of *Ischnus variegatus* Prov. ♂ is, as stated by Townes and confirmed by my recent type studies, identical with Cresson's type (number 1253) as mentioned above and therefore specifically different from *Ischnus w-album* Cresson. The name *Cratichneumon variegatus* Prov. has to be resurrected from synonymy.

A comprehensive treatment of the genus is planned.

Types of Tingidae Described by Torre-Bueno (Hemiptera) [1]

By George W. Byers

In 1948, the Snow Entomological Museum of the University of Kansas acquired two outstanding collections of Hemiptera, those of J. R. de la Torre-Bueno and G. W. Kirkaldy. Together with the collections were purchased the extensive libraries of reprints and separate papers accumulated by these two hemipterists. Interpolation of the Torre-Bueno and Kirkaldy specimens into the Snow Museum collection has only recently been completed. It was found at the time of purchase that the Torre-Bueno collection had been extensively damaged by water (as a result of flooding of a basement in which the collection had been stored) and by dermestids. The following notes pertain to the type series of two species of Tingidae found in this collection, which are, as far as I am aware, the only North American species of this family described by Torre-Bueno.

Acalypta lillianis Bueno

1916. A new tingid from New York state. Bull. Brooklyn Ent. Soc., 11 (2) : 39–40.

A box that had contained about eighty pinned tingids, including a part of the type series of this species, was found to have all the specimens detached from the paper points to which they had been glued; the insects lay scattered in the bottom of the box. By reference to the original description and comparison with specimens kindly loaned from the United States National Museum by Dr. Peter D. Ashlock, I isolated from the debris six specimens that matched *Acalypta lillianis*. Fortunately there were also only six labelled pins lacking specimens of this species. Of the salvaged six, two were macropterous females and the

[1] Contribution No. 1044 from the Department of Entomology, University of Kansas, Lawrence, Kansas.

others brachypterous males. In the description, Torre-Bueno stated the length and width of both the female and male syntypes, and only one of each sex of the available specimens fit these measurements. Accordingly, the identity of the two "types" was established. As the only paratype recorded from Marquette, Michigan, was a female, the replacement of the second female on the one pin so labelled was a simple matter. All male paratypes were collected at the type locality, White Plains, New York, between 18 and 28 May. It was thus not possible to restore the three remaining males to their correct pins with certainty. However, I have arbitrarily replaced them, on the basis that this is better than discarding them, and it seems unlikely that there could be any serious confusion arising from this action.

Acalypta lillianis was described from eight macropterous females and nine brachypterous males. According to the paper cited, paratypes were sent to the U. S. National Museum, H. M. Parshley and Otto Heidemann. However, neither of the supposed male paratypes loaned to me by the U. S. N. M. is actually a paratype, if one may judge from the data on the labels compared to that presented in the original description. It should also be noted that the female "type" bears a label reading "White Plains, N. Y., 21–V–11," while the description says this type was taken on 25 May, a paratype female having been taken on 21 May. There is no indication that the labels have ever been removed and repinned, so it appears that Torre-Bueno merely made a small mistake in pinning or in transcribing data.

Dr. Carl J. Drake, who is preparing a world catalogue of the Tingidae, has asked me to designate a single type from this series. Accordingly, following the precedent of Torre-Bueno himself in the case of *Corythaica bellula* (see below), I designate as lectotype the macropterous female syntype bearing the label data stated above. The brachypterous male syntype is designated lectomorphotype.

Corythaica bellula Bueno

1917. A new species of tingid from New York. Bull. Brooklyn Ent. Soc., 12 (1) : 19–20.

This species was described on the basis of seven macropterous females, six brachypterous females and seven brachypterous males, all collected near White Plains, New York. Twelve of these specimens, including the macropterous female holotype, brachypterous male morphotype, and three macropterous females, three brachyterous females and four brachypterous males, all paratypes, are in the Snow Museum collection. Dr. Drake informs me that one macropterous and one brachypterous paratype are in his collection. The present location of the other six paratypes is unknown to me. Torre-Bueno states that there were about 150 individuals collected on the same day as the type (26 June 1910) and that the species had been collected "in April, May, June, July, August and September." However, all the type series are June and September specimens. Apparently half a dozen of each of the three forms were arbitrarily selected as paratypes from a large number of specimens available. Fifteen specimens not labelled as paratypes but apparently a part of this large series are in the Snow Museum collection. Of these, only one is a macropterous form, all are from White Plains, New York, and all the indicated months except August are represented.

Review

THE ODONATA OF CANADA AND ALASKA by Edmund M. Walker, Professor Emeritus of Zoology University of Toronto, Honorary Curator of Zoology, Royal Ontario Museum. Volume Two, Part III. The Anisoptera—Four Families (Aeshnidae, Petaluridae, Gomphidae, Cordulegastridae). University of Toronto Press: 1958. Pp. i–xi, 1–318, Pls. 1–164 interspersed in the text, the figures on each plate numbered separately.

A Foreword by Dr. F. A. Urquhart describes how the increasing amount of material at Dr. Walker's disposal resulted in a widening of the method of publication.

The NEWS for April, 1954, contains a review of Volume I, Parts I–II of this work issued in 1953. That review states that the account there given of the general structure of the Odonata in Part I "is evidently designed to serve as an introduction both to this volume and to a later one on the Anisoptera." The present part, dated 1958, is that later one on the Anisoptera.

The general characteristics of the Anisoptera are described for the adults (pp. 3–9) and the larvae (pp. 9–11). Superfamilies are recognized for the Anisoptera: Aeshnoidea, Cordulegastroidea and Libelluloidea, all of Tillyard (pp. 11–12). Three families (Aeshnidae, Petaluridae and Gomphidae) are listed for the Aeshnoidea, one (Cordulegastridae) for the Cordulegastroidea, and three (Macromidae, Corduliidae and Libellulidae) for the Libelluloidea (pp. 11–12). Keys to the Anisopteran families occupy pp. 12–14 (adults pp. 12–13) and nymphs (p. 14). Thence follow the systematic descriptions and keys to the taxonomic divisions of the Aeshnidae (pp. 14–131), of the Petaluridae (pp. 131–135), of the Gomphidae (pp. 135–289), and of the Cordulegastridae (pp. 289–307). A bibliography occupies pp. 309–313, and an Index pp. 315–318.

A comprehensive review of the geographical distribution of the Canadian and Alaskan Anisoptera is not given as it was for the Zygoptera in Part I.

The total numbers of species and subspecies treated in this book are Aeshnidae 29, Petaluridae 1, Gomphidae 40, Cordulegastridae 4.

As in Volume I there is here given for each species and subspecies, as far as data are available: the most conspicuous characteristics (diagnosis), the description of male and of female, the variation, habitat and range, distribution in Canada, and field notes. The field notes deal with habits, time and place of emergence of adults, habits of flight and of rest.

The figures of the adults include the interocular area on the top of the head, the male appendages, the vulvar laminae, the male genitalia of the second abdominal segment, the thoracic color pattern, the color pattern of abdominal segments 6–10, dorsal views of entire nymphs and lateral views of the abdomen of some, dorsal views of abdominal segments 6–10, the left labial palp and ligula of nymphs—a wealth of illustration. Plate 59 illustrates these last-named organs of 18 species; so slight are the specific differences here that we have raised the question, both with Prof. Walker and ourselves, as to whether they are truly specific or may not be in some cases intraspecific variations. We are not aware that such differences have been investigated; until they are their status must remain doubtful.

The similarity in shape between these figures on Prof. Walker's Plate 59 and figures of the same organs in nymphs of neotropical Gomphines shown by Prof. Needham in Trans. Amer. Ent. Soc., Vol. LXV, Pl. XX, figs. 1, 3, 5, 11, 15, 16, 18, 20, 22, 24, 25; Pl. XXI figs. 27, 31, 33; Vol. LIX, Pl. XIV, figs. 2b, 5b, 7b, shows how wide the possibilities of variation may be.

As stated in the review of Part I, this work will be of great use to entomologists in the United States. It will be of use also to those of northern Eurasia, while its mode of presentation should be an inspiration to biologists everywhere.—PHILIP P. CALVERT.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Bembicini and Stizini (Hym., Sphec.) of New World wanted for revis. study. Will return upon request or at end of project. James E. Gillaspy, Dept. of Zoology, Univ. Texas, Austin 12, Texas.

Agapema galbina. Will exchange cocoons of this moth for nature books. E. Frizzell, Route 4, Box 96, San Benito, Texas.

Tenebrionidae of the World wanted, in exchange for insects of Argentina and neighboring countries. Horacio J. Molinari, Av. Lib. Gral. San Martin 55, Acassuso (Buenos Aires), Rep. Argentina.

Butterflies. Wish to exchange specimens for Japanese species. Please write to Ichiro Nakamura (Boy, age 16), 26 Aza-Nichiyama Obayashi Takarazuka-shi, Hyogo-Ken, Japan.

Phasmidae of nearctic area desired alive. Purchase or trade, drawing on large stock of major orders, worldwide. Domminck J. Pirone, Dept. Entomology, Cornell University, Ithaca, N. Y.

Nitidulidae and Rhizophagidae wanted in exchange for European beetles of all families. O. Marek, Zămberk 797, Czechoslovakia.

Wanted and Needed. We are compiling a history of entomology, and particularly, at present, of the amateur insect clubs that flourished 50 to 75 years ago. Will you who have knowledge of such early clubs or societies advise me, giving facts on the time of existence, members, etc., which you may have. J. J. Davis, Dept. of Entomology, Purdue University, Lafayette, Indiana.

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A TAXONOMIC STUDY OF THE NORTH AMERICAN LICININI WITH NOTES ON THE OLD WORLD SPECIES OF THE GENUS DIPLOCHEILA BRULLE (COLEOPTERA)

By George E. Ball

258 pages of text, 75 tables, 3 diagrams, 15 plates, table of contents and index

This monograph considers the geographical variation, relationships, evolution and taxonomy of the carabid tribe Licinini. A general treatment, explaining the taxonomic approach used, definition of terms, criteria for delimiting species and subspecies, etc., precedes the systematic position. The genera *Diplocheila* (subgenera *Diplocheila, Neorembus, Isorembus*), *Dicaelus* (subgenera *Paradicaelus, Dicaelus, Liodicaelus*) and *Badister* (subgenera *Badister, Trimorphus, Baudia*) are each treated in some detail. Keys to the genera and species are given throughout as well as a description (or diagnostic notes), variation, distribution and frequently locality records for each of the forms treated. The phylogeny and zoogeography of each genus are discussed in a separate section. Variation of mensurable characters is treated in the 75 tables. Fifteen plates depict structural (including genitalia) and variational features of the species discussed.

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